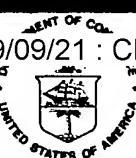


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UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for International Trade
 Washington, D.C. 20230

Executive Registry

85- 097

January 4, 1984

The Honorable
 William J. Casey
 Director
 Central Intelligence Agency
 c/o 345 Old Executive
 Office Building
 Washington, D. C. 20505

Dear Bill:

Attached are two publications you might want to quickly peruse. One is a list of the publications that reports what the International Trade Administration has issued in the course of the last year or so, and the other is a summary of an extensive annual report on our outlook for American industry in 1985 -- it got good media coverage and I think is a credible piece of work even though it has to be highly estimative.

As you know, I am off to Moscow in the morning and want very much to see you on my return.

Sincerely,

A handwritten signature in cursive ink that appears to read "Olmer".

Lionel H. Olmer

Enclosures



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L-301

1985 U.S. INDUSTRIAL OUTLOOK



U.S. DEPARTMENT OF COMMERCE
International Trade Administration

FOR RELEASE

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HIGHLIGHTS

The 1985 U.S. Industrial Outlook: Summary and Highlights

Introduction

For the past 25 years, the Department of Commerce has published an Industrial Outlook which chronicles the growth of the economy in terms of the many industry sectors which make it up. Today we announce the publication of the 26th edition of the Outlook, which will be available in January 1985.

The Outlook is a basic reference text for all those who seek microeconomic information on industrial growth and trade. Nowhere else is the U.S. economy broken down into such detail. Nowhere else is there a record of such detailed information which exists over a 26-year time span. The Outlook will be of use to those engaged in market planning and development, corporate planning, merger and acquisition planning, and business research.

This year, the Outlook covers more industries and provides more information and analyses on American business competing in world markets than ever before. It is a more complete reference, covering over 350 industries in approximately 700 pages. More coverage has been devoted to service industries, and emerging industries such as videotex and teletext services, composites, ceramics, biotechnology, robotics, and computer aided design and manufacturing are covered for the first time. The analytical material has been upgraded and more comprehensive statistics are offered.

The Outlook is the product of more than 100 industry analysts in the Department of Commerce. Due to the growing recognition of the importance of international competition and world markets in developing a forward-looking program for supporting U.S. industries, the Outlook staff and industry analysts have been relocated from the former Bureau of Industrial Economics to the International Trade Administration. The result of this move has been a broadening of the Department's scope with respect to industrial analysis, and therefore a clearer picture of U.S. industry prospects. Given the breadth of the Outlook, the chapters provide essentially a "snapshot" of each industry at a given point in time.

Methodology and Assumptions

The 1985 Industrial Outlook is essentially a compiled and integrated forecast of the growth rates from 1984 to 1985 of more than 350 industries which make up the U.S. economy. The most recent Census data available is for 1982. All numbers for succeeding years are estimates, short-term projections, or longer-range forecasts.

The forecasting process for the U.S. Industrial Outlook begins with an overall macroeconomic forecast of the U.S. economy consisting of a short-run forecast for one year ahead, and longer-run forecasts extending 5 years into the future. These scenarios are used to provide projections of final demand for major gross national product categories and then are subjected to an input-output modeling technique to translate those broad forecasts into (2- and 4- digit)

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industry shipments forecasts. These macroeconomic and industry projections are provided to the industry specialists responsible for the preparation of individual sector forecasts. This information is applied by the industry specialists to their assigned industries. They adjust these industry forecasts to reflect specific developments which their judgment indicates will affect the outcome.

Econometric industry forecasts have limitations. While the macroeconomic environment greatly influences overall activity, special circumstances with respect to any given industry will sometimes outweigh the effect of general economic conditions on that industry. Industry specialists, therefore, rely heavily on their special industry-specific knowledge to develop their particular chapters and use these macroeconomic assumptions and forecasts as guides only.

The near term macroeconomic forecast upon which the Outlook is based is taken from the 1984 Mid-Session Budget Review released by the Office of Management and Budget in August 1984. This Review estimated a real gross national product (GNP) increase of 7.3 percent from 1983 to 1984. During the first half of 1984, real GNP growth accelerated to an annual rate of about 9 percent; inflation slowed to about 4 percent; unemployment declined to 7.5 percent; industrial production increased about 9.5 percent and business fixed investment about 22 percent above the low point of the recession in 1982. As we now know, the economy has moderated in the second half of this year, although inflation and unemployment have remained stable, and preliminary 1984 GNP estimates made in December indicate an average annual growth rate of 6.7 percent.

Both the near-term and longer-range macroeconomic forecasts are produced by the Department of Commerce, Office of Industry Assessment using the Wharton econometric model. These forecasts assume that a number of current controversial issues regarding Federal fiscal and monetary policy -- e.g., the Federal budget deficit, the tax system, the rate of growth of the money supply — are somehow resolved early in 1985. Projected moderate growth and expected action on the Federal deficit should allow interest rates to decline, bring downward pressure on the value of the dollar in international markets, and lower the trade deficit. With coincident projected economic recoveries of U.S. trading partners, U.S. exports are expected to revive and slowly reduce the trade gap.

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The Federal Reserve's monetary policy is also assumed to be accommodating in 1985, with monetary aggregates (M1 and M2) assumed to remain well within their target ranges.

Finally, fiscal policy in 1985 is assumed to follow the Administration's assumptions underlying the 1984 Mid-Session Budget Review released by the Office of Management and Budget in August 1984. This review envisaged cuts in non-defense expenditures, and increases in defense expenditures--both in real terms.

Under these assumptions:

- o U.S. GNP moderates to an annual rate of 4.3 percent in 1985 -- the figure used to make industry projections for the 1985 Outlook.
- o The inflation rate, as measured by the GNP deflator, is expected to continue at about 4.5 percent. Wage increases are expected to be approximately 4 percent in 1985, and productivity growth is expected to slow to about 1.5 percent by the end of the year. The civilian unemployment rate is projected to fall to 7 percent in 1985, from 7.4 percent in 1984. This improvement would occur despite a slowdown in production, and is compatible with the expected decline in productivity growth. Most of the slowing of the economy can be traced to the manufacturing sector.
- o Personal consumption expenditures are projected to grow at 3.1 percent in 1985 compared to 5.1 percent in 1984. Most of the decline will occur in consumer purchases of durable goods.
- o Fixed investment expenditures by business are projected to grow at 10.2 percent in 1985, down from 19.8 percent in 1984.
- o As economic growth moderates in 1985, housing starts are projected to fall below 1984 levels, to less than 2 million units.
- o Exports are projected to rise 6.1 percent in 1985 as economic recovery abroad gains momentum. With gradual depreciation of the U.S. dollar in 1985, along with a slowing of U.S. economic growth, real imports are projected to grow 3.5 percent in 1985. The real trade balance remains negative for 1985, although less than the \$125 billion deficit expected for 1984. Improvements in the real trade balance are expected after 1985.
- o Total real government purchases are assumed to increase by about 6.3 percent in 1985. Defense purchases would increase by 7.7 percent, and non-defense purchases by 6.7 percent. State and local government purchases would increase by 5.5 percent.

Further details are available in Table 1 on the following page.

Table 1
Forecast for 1984-85, Real Gross National Product*
 (billions of 1972 dollars)

	Actual				Projected			
	1983	1983 share (percent)	1984	Growth 83-84 (percent)	1984 share percent)	1985	Growth 84-85 (percent)	1985 share (percent)
Gross national product	1,534.7	100.0	1,646.0	7.3	100.0	1,716.9	4.3	100.0
Personal consumption	1,009.2	65.8	1,060.9	5.1	64.4	1,093.5	3.1	63.7
Durables	157.4	10.3	177.1	12.5	10.8	181.1	2.3	10.5
Non-durables	376.3	24.5	394.0	4.7	23.9	405.8	3.0	23.6
Services	475.4	31.0	489.8	3.0	29.7	506.6	3.4	29.6
Gross private domestic investment	221.1	14.4	291.1	31.7	17.7	306.8	5.4	17.9
Fixed investment	224.7	14.6	265.5	18.2	16.1	286.3	7.8	16.7
Non-residential	171.0	11.1	204.8	19.8	12.4	225.7	10.2	13.1
Structures	49.2	3.2	57.6	17.1	3.5	61.8	7.3	3.6
Producer durables	121.8	7.9	147.3	20.9	8.9	163.9	11.3	9.5
Residential	53.7	3.5	60.7	13.0	3.7	60.6	-0.2	3.5
Change in business inventories	-3.6	-0.2	25.6	-	1.6	20.6	-	1.2
Net exports	12.6	0.8	-8.6	-	-0.5	-5.1	-	-0.3
Exports	139.4	9.1	147.8	6.0	9.0	156.8	6.1	9.1
Imports	126.9	8.3	156.4	23.2	9.5	161.9	3.5	9.4
Government purchases	291.9	19.0	302.6	3.7	18.4	321.7	6.3	18.7
Federal	116.2	7.6	122.2	5.2	7.4	131.4	7.5	7.6
Defense	84.7	5.5	91.0	7.4	5.5	98.0	7.7	5.7
Non-defense	31.5	2.1	31.3	-0.6	-1.9	33.4	6.7	1.9
State and local	175.7	11.4	180.4	2.7	11.0	190.3	5.5	11.1

*Forecast developed October 1984 for the 1985 U.S. INDUSTRIAL OUTLOOK.
 Detail may not add to totals due to rounding.

The 1986-89 Macroeconomic Forecast - The longer term economic assumptions underlying the Outlook are based on a 1986-89 forecast of an average annual U.S. growth rate of 4.0 percent. Inflation through 1989 is projected at the present annual rate of 3.9 percent, and the unemployment rate is expected to decline to 5.8 percent.

One of the major driving forces in these long-run projections is demographic shifts occurring in the United States. During the past two decades, the baby-boom generation entered the labor force in large numbers, while social and economic changes encouraged women to participate in the labor force in increasing numbers. The increase in the supply of labor was accompanied by real-wage growth at a much slower rate, and by sluggish productivity change, even stagnation, in the later 1970's.

The U.S. population is expected to grow in the 1980's at a rate averaging 0.9 percent, a significant reduction from the 1.2 percent averaged in the past 25 years. This estimate is implicit in the preliminary population projections of the Bureau of Census based on the 1980 Census. The dominant factor is the passing of the baby-boomers out of the prime childbearing years. Fewer people are now turning 18 and entering the working force population, and there is probably an upper limit to the rate of increase in female participation. Accordingly, the labor force is projected to expand by 20 million, or 18 percent, between 1983 and 1995. This slowdown will also mean a slowdown in the employment growth rate--from a record of 27 percent between 1971 and 1983, to 21 percent between 1983 and 1995.

Other assumptions on which the 1986-89 forecast is based include:

- Non-farm productivity growth, which averaged about 1.2 percent in the 10-year period 1972-83, is projected at 1.9 percent per year in the following decade (1983-93).
- A major concern in U.S. fiscal policy area is federal deficit reduction. Fundamental tax reforms are assumed, including some broadening of the tax base and increase in tax rates. Even with selective spending cuts, however, the federal deficit is assumed to remain sizeable--above \$140 billion--through 1989.
- Monetary policy is assumed to remain unchanged during 1985-89, with current monetary growth targets of 5.5 percent for M1 and 7.5 percent for M2 not changing significantly during the forecast period. Given the forecast for 1985 of higher economic growth, such money targets may imply a slight rise in interest rates.
- Personal consumption expenditures (PCE) are expected to increase at a 3.1 percent annual rate over the period 1986-89--the same rate as projected for 1984-85. PCE as a percent of total gross national

product is expected to decline slightly--from 64.4 percent in 1984 to 61.6 percent in 1989. Durable goods purchases are forecast to grow at a 4.1 percent average annual rate from 1986 to 1989, compared with a 2.6 percent rate for non-durable goods purchases over the same period. Services are expected to grow at an annual rate of 3.2 percent.

- Non-residential fixed investment is projected to grow at 6.0 percent per year from 1986 to 1989--less than the 10.8 annual growth rate expected for 1983 to 1985.
- Residential construction is expected to decline from an average annual growth rate of 16.3 percent in 1983-85 to 1.5 percent in 1985-89.
- It is assumed that the Administration's budget plans for defense and non-defense spending given in the Mid-Session Budget Review will be carried out over the 1986-89 period. If total federal purchases grow at a 3.9 percent annual rate from 1986 to 1989, the defense component will increase about 5.4 percent per year during the same period. State and local government purchases are expected to grow at about 1.6 percent annually during the 1986-89 period.

Further details are available in Table 2 below.

Table 2
Assumed Annual Real GNP Growth Rates, 1983-85 and 1986-89
(average annual rates and percent share)

Item	1983/85	1986/89	1989 share
Gross national product	5.1	4.0	100.0
Pers. consumption exp.	4.3	3.1	61.6
Durables	9.0	4.1	10.6
Nondurables	3.8	2.6	22.4
Services	3.3	3.2	28.6
Fixed investment	11.9	5.1	17.4
Nonresidential	10.8	6.0	14.2
Structures	5.5	4.3	3.7
PDE	13.2	6.7	10.5
Residential investment	18.3	1.5	3.2
Exports	2.2	8.0	10.7
Imports	11.5	1.6	8.5
Government purchases	3.2	2.7	17.9
Federal	4.0	3.9	7.6
Defense	7.4	5.4	6.0
Non-defense	-3.6	-0.9	1.6
State and local purchases	2.7	1.9	10.2

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Highlights of the Outlook for Manufacturing Industries

Of the 350 industries covered in the Outlook, most are included in the manufacturing sector. Appendix Table 1 ranks 209 of these industries by the growth rates projected for each in 1985 Outlook. The estimated rates for 1984 and the actual compound annual long-term rates for the 1972-82 period are shown to place the current forecast in perspective. All rates are based on industry shipments measured in 1972 dollars. Most of the industries are defined at the four-digit Standard Industrial Classification (SIC) level; in a few cases, however, the "industry" is an aggregation of two or more four-digit industries.

In general, shipments are projected to increase in 1985 for 177 of the 209 industries (85 percent), while the remainder are projected to decline or show zero growth. For most of the 209 industries -- almost three-fourths -- growth rates are projected to be less in 1985 than they were in 1984 during the rapid recovery from the 1981-1982 recession.

Among those industries projected to increase in growth in 1985, most will have only slightly higher growth rates; only a few exceptions are expected to have sharply higher growth rates. These exceptions include several of the primary metals industries, which were severely affected by the recession and are recovering later than most industries, and some aerospace industries which will benefit from increased defense spending in 1985. The forecast growth rates, though modest in comparison with 1984, still will exceed historical rates for about 70 percent of the manufacturing industries. Also, about 70 percent of the industries with negative long-term growth should show positive growth in 1985, although in some cases the positive rates are more a reflection of a very low shipments base in 1985 rather than a basic turnaround.

A distribution of the 209 industries by growth rates for 1984-85 and 1983-1984 is shown below in Table 3.

Table 3
Distribution of Manufacturing Industries by Growth Rates

Growth Rate	84/85 (Projected)		83/84 (Estimated)	
	Number	Percent	Number	Percent
10% and greater	17	8.1	54	23.8
5% to 10%	52	24.9	67	32.1
0% to 5%	112	53.6	65	31.1
-5% to 0%	25	12.0	13	6.2
-5% or less	3	1.4	10	4.6
Growth equal to or greater than GNP growth (percent) of	82	39.2	79	37.8
	4.3 (forecast)		7.3 (estimate)	

A comparision of manufacturing growth between 1984 (estimated and 1985 (projected) indicates that:

- o Approximately the same number of industries will grow at a rate equal to or greater than GNP in 1985 (82) compared to 1984 (79).
- o Approximately the same number of industries will experience positive or zero rates of growth in 1985 (181) compared to 1985 (186).
- o The number of industries projected to grow to 10 percent or greater will be significantly less in 1985 (17) compared to 1984 (54).
- o The number of industries projected to grow between 5 percent and 10 percent will be slightly less in 1985 (52) compared to 1984 (67).
- o The number of industries projected to grow between 0 and 5 percent will be significantly higher in 1985 (112) compared to 1984 (65).

These changes can be attributed to the slower growth in projected GNP coupled with the fact that the recovery has proceeded to the point where most industries are moving in tandem with the economy as a whole.

The 209 manufacturing sectors covered in the Outlook (Appendix Table 1) are aggregated to the 2-digit SIC code level, and the corresponding data are shown in Table 4. A comparison of the growth rates again shows the following:

- o All sectors will experience a moderating rate of growth except for primary metals. Most of the growth in primary metals represents a turnaround from an extremely depressed base rather than a fundamental change in their prospects.
- o Consumer durables, construction materials and motor vehicles are following the moderating growth typical in the advanced stages of a recovery. Pent-up demand resulting during the recession of 1981-82 has been satisfied by the recent robust recovery and sales should moderate accordingly.
- o Continued strong growth in SIC's 36 and 35 is due to the strong demand for computers and related equipment and the incorporation of semiconductors and related components into all manufactured products.

Table 4

Growth Rates of Covered Manufacturing Industries
by Two-Digit SIC Codes

Rank	Industry	Annual Growth Rates		Compound Annual Growth Rate
		1985/1984 (Projected)	1984/1983 (estimated)	1972-1982 (Actual)
35	Machinery except electrical	11.2	13.5	5.4
33	Primary metal industries	8.9	2.1	-4.3
37	Transportation equipment	8.1	11.5	-0.7
36	Electrical and electronic* machinery, equip. supplies	6.8	9.7	4.0
38	Measuring, analyzing and controlling instruments; photographic, medical and optical goods	6.0	10.6	6.7
34	Fabricated metal products	5.3	10.4	-0.6
28	Chemicals & allied products	4.3	7.7	1.6
39	Misc. manufacturing indus.	4.3	4.2	0.7
26	Paper & allied products	4.1	6.2	1.6
27	Printing, publishing & allied industries	4.0	5.4	2.6
25	Furniture & fixtures	3.7	8.7	-0.9
32	Stone, clay, glass & concrete products	3.1	10.3	-2.0
30	Rubber & misc. plastic pdts.	2.5	6.3	1.7
20	Food & kindred products	0.8	1.6	1.6
31	Leather and leather products	0.7	-1.2	-1.3
21	Tobacco manufacturers	-0.6	1.5	0.1
29	Petroleum refining & related industries	-0.9	2.5	1.4
23	Apparel	-4.0	-22.8	-5.6
24	Lumber and wood products	-5.2	9.1	0.0
	Gross National Product	4.3	7.3	2.3

*Excludes SIC 3674 which uses a new price deflator which distorts the aggregated figures.

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Manufacturing Growth Leaders

Table 5 shows the top 20 manufacturing industries ranked with respect to Outlook growth rates projected for 1985. For comparison purposes, estimated 1984 growth rankings and actual 1972-82 growth rankings are also provided.

Only three of the top 10 growth performers for 1985 show up in the top 10 performers for 1972-82; four in the top 20. Similarly, only four of the top 20 performers in 1985 show up in the top 20 in 1984. Those sectors with some degree of carryover include semiconductors and related devices* (Ranked 1 in 1985), electronic computing equipment* (Ranked 5 in 1985), X-ray apparatus and tubes (Ranked 7 in 1985), instruments to measure electricity (Ranked 14 in 1985), and prefabricated metal buildings (Ranked 16 in 1985). The preponderance of electronics-based industries is striking.

*All calculations used in Appendix Table 1 are generally based on industry shipments expressed in 1972 dollars. The percent change figures provide a measure of changes in the volume of industry shipments and allow interindustry comparisons without the distorting influence of price changes.

The industry shipment value for SIC 3573, Electronic Computing Equipment is reported in current dollars. Current dollars are used due to the lack of a reliable deflator to use construct 1972 dollar estimates.

The industry shipment value for SIC 3674, Semiconductors and Related Devices, is deceptive. Unlike the other covered industries, the constant dollar value (119, 530 million 1972 dollars) for SIC 3674 exceeds the current dollar value (23, 906 million current dollars). The reason for this is that the rate of technical improvements and price declines in products has greatly outstripped inflationary pressures.

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Table 5

Manufacturing Growth Leaders: 1985 Outlook

Rank 1985 Growth	SIC	Title	Projected Growth 84-85 %	Estimated Growth 83-84 %	Rank 83-84	Actual Growth 72-82 %	Rank 72-82
1	3674	Semiconductors & Related Devices	37.4	44.2	2	34.1	1
2	3332	Primary Lead	28.0	-27.0	209	-3.8	190
3	3721	Aircraft	21.1	-6.6	203	2.8	61
4	3764	Space Propulsion Units & Parts	18.0	9.6	60	1.4	86
5	3573	Electronic Computing Equipment	17.0	20.5	6	19.2	2
6	3334	Primary Aluminum	15.6	-17.0	207	-2.2	173
7	3693	X-ray Apparatus & Tubes	15.4	15.4	18	15.4	4
8	3761	Guided Missiles & Space Vehicles	14.7	12.6	32	0.2	114
9	332	Iron & Steel Foundries	13.6	12.8	30	-4.3	194
10	3714	Motor Vehicles Parts & Accessories	12.3	16.1	17	-4.0	193
11	3769	Space Vehicle Equipment, nec.	11.7	10.8	46	-0.8	141
12	336	Nonferrous Foundries	10.8	5.0	121	-2.1	170
13	2819	Industrial Inorganic Chemicals, nec	10.0	10.7	47	0.1	123
14	3825	Instruments to Measure Electricity	10.0	19.1	9	8.4	13
15	3331	Primary Copper	10.0	-2.4	197	-2.3	175
16	3448	Prefabricated Metal Buildings	10.0	18.4	10	4.2	33
17	3451	Screw Machine Products	10.0	11.6	42	-0.1	138
18	3544	Special Dies, Tools, & Jigs	9.6	16.3	15	-0.9	147
19	2812	Alkalies & Chlorine	9.6	1.9	168	-5.4	201
20	3623	Electric Welding Apparatus	9.4	7.8	77	-1.0	153

Three of the top 10 and five of the top 20 1985 industries are from the metal area: primary lead, primarily aluminum, iron and steel foundries, non-ferrous foundries, and primary copper. Although these industries are projected to grow 10 percent or greater in 1985, they are distinguished in the table by their very low rankings for either or both 1984 estimated growth and 1972-1982 actual growth. They essentially represent turnaround industries from previous years when they were among the worst growth performers.

Three of the top 10 and four of the top 20 industries are from aerospace area: aircraft, space propulsion and parts, guided missiles and space vehicles, and space vehicle equipment not elsewhere classified. Aircraft is coming off of a particularly bad year in 1984 while the space-related industries have been growing more steadily. Growth in aerospace industries is largely due to anticipated government expenditures for national defense.

We have selected seven industries, shown below in Table 6, as "growth leaders" on the basis of their past and future long term performance. Each of these industries has had growth rates significantly exceeding the growth in GNP during the 1972-1982 period, and is projected to have good growth to 1989. Other growth leaders can be found in the complete U.S. Industrial Outlook.

Table 6

<u>Manufacturing Growth Leaders</u>	<u>Industry</u>	<u>Annual Growth Rates - Percent</u>		
		<u>Annual Growth</u>	<u>Projected Growth</u>	<u>Forecast Growth</u>
		<u>72-82</u>	<u>85-84</u>	<u>89-85</u>
3674	Semiconductors and Related Devices	34.1	37.4	25.0
3573	Electronic Computing Equipment	19.2	17.0	17.0
3693	X-ray Apparatus and Tubes	15.4	15.4	15.4
3678	Electronic Connectors	10.6	5.9	8.0
2795	Lithographic Platemaking Services	9.8	3.8	4.5
3679	Electronic Components nec.	8.8	6.9	6.5
3662	Radio and TV Communication Equipment	8.0	9.1	8.0

Semiconductors and related devices lead the list with a 37.4 percent projected growth for 1985 and a 15 percent annual rate of growth forecast to 1989. Electronic computing equipment is next with a 17.0 percent projected growth and a annual rate of growth of 17.0 percent to 1989. X-ray Apparatus and Electromedical Equipment benefitting from the introduction of new diagnostic equipment such as magnetic resonance scanners is projected to grow 15.4 percent next year and to continue that growth to 1989. Electronic connectors which is projected to be down to 5.9 percent growth in 1985 from an average of 10.6 percent during 1972-1982 is anticipated to move up to 8.0 percent growth in 1986 and continue through 1989. Lithographic platemaking services are expected to grow at 3.8 percent in 1985 and move up to the 4 to 5 percent range through 1989. Electronic components are projected to grow at 6.9 percent in 1985 and ease slightly to 6.5 percent through 1989. Radio and TV communications equipment is projected to grow at 9.1 percent in 1985 and return to its past long term growth rate of 8.0 percent to 1989.

Semiconductors and Related Devices

Real value of shipments for semiconductors and related devices will increase 37.5 percent in 1985 with shipments approaching 24 billion in current dollars. This is down slightly from its 44.2 percent increase in 1984. Rapid technological progress resulting in increased capability and decreasing prices has lead to applications in all areas, particularly telecommunications, robotics, instrumentation and consumer products. Trade in this area is very intensive with imports projected to reach 9.5 billion and exports 6.5 billion in current dollars in 1985. While the United States has maintained its edge in microprocessors the Japanese have been successful in dynamic random access memory, overtaking the Americans in 64K and assuming an early lead in 264K. Trade imbalance with Japan in 1984 is estimated at 1.5 billion dollars accounting for almost two thirds of the worldwide U.S. trade deficit. Rapid innovation has not only resulted in a base of standardized products but also given rise to new businesses providing custom and semicustom circuits. The relative importance of U.S. offshore production declined for the first time in 1984 with the investment in state-of-the-art automated facilities in the United States. Growth is projected at 25 percent in real terms to 1989. Intense Government and industry research both in the U.S. and abroad will make this a very competitive area.

Electronic Connectors

Real value of shipments will increase 6 percent reaching over 3.4 billion current dollars in 1985. A positive balance of trade of 123 million dollars is projected for 1985. Demand for computers, communications and defense electronics should provide an 8 percent annual growth rate through 1989.

Electronic Components

Real value of shipments in 1985 of this broad category of products ranging from printed circuit boards to bubble memories is projected to grow by 6.0 percent exceeding 20 billion in current dollars. Imports are projected to exceed exports by \$558 million in 1985, up from \$525 million in 1984. Emerging segments such as bubble memories are projected to grow at a more rapid rate than the other segments. While not equaling its previous growth rate, this segment is projected to grow at 6.5 percent through 1989.

X-Ray and Electromedical Equipment

Shipments by the x-ray and electromedical equipment industry are projected to increase at the same 15.4 percent rate in 1985 to over 7 billion in current dollars and are expected to continue at this rate to 1989. Electromedical products are accounting for an increasing share of shipments at the expense of x-ray equipment. This industry exports about 19 percent of shipments and exports and imports are projected to be in-balance for 1985. While hospital cost-containment regulations may put pressure on this industry, demand for health care services and equipment is expected to increase as a result of an aging population and medical advances. Technological innovation is expected to produce newer and more cost effective products resulting in product obsolescence as in the replacement of the CAT scanners by magnetic resonance imaging devices.

Electronic Computing Equipment

Shipments of the U.S. computer industry are projected to increase by 17 percent in 1985 to about 62 billion dollars. While exports are expected to increase by 30 percent, the value of imports is projected to increase almost three times as much, reducing the trade balance from 5.4 billion dollars in 1984 to 2.1 billion in 1985. Continued acceleration of imports at this rate could put the U.S. trade surplus into a deficit by 1986. Long term prospects while favorable will be impacted by the evolution to high volume standardized products resulting in requirements for cost reduction. Widespread efforts of foreign government to assist in the development of local computer industries through such policies as market reserves will have an increasing impact on U.S. exports.

Radio and TV Communication Equipment

Industry shipments are projected to grow about 9 percent in 1985, up from 7.5 percent in 1984. Over 45 percent of the industry's shipments are purchased by the Department of Defense which spent 17 billion dollars on the products of this industry. International trade is not a major factor and the U.S. enjoyed a trade surplus of 400 million dollars in 1984. Continued growth in demand for high technology electronic equipment by the Armed Forces should provide favorable long term prospects for an 8.0 percent compound annual growth rate to 1989. Fiber optics communications systems should grow rapidly in response to growing market demand, particularly in the telephone industry.

Lithographic Platemaking Services

This industry which primarily makes lithographic (offset) printing plates has exceeded the growth rates of all other industry groups within the printing, publishing and allied industries since 1972 when Census data was first collected. Value of shipments for 1985 are projected to increase by 3.8 percent down from 6.1 percent in 1984. Long term growth to 1989 is projected at a 4.0 to 5.0 percent compound annual rate.

Manufacturing Problem Industries

Table 7 on the following page shows the 20 manufacturing industries with the lowest growth rates projected in the Outlook for 1985 -- those industries in ranks 190-209 from Appendix Table 1.

There is a great deal of correspondence between the lowest 20 industries projected for 1985 and their 1972-82 actual growth rates, indicating that many of these industries have been declining for some time. Seven of the lowest 20 1985 industries are in the lowest 20 for 1972-1982; 9 additional industries are in the lower half for 1972-1982. The principal exceptions are logging camps and log contractors and ship building and repairing which performed fairly well from 1972-1982.

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There is a great deal of correspondence of the 1985 rankings with the 1984 rankings, the principal exceptions being industries in which growth occurred in 1984 after ten years of decline from 1972-1982 -- primary zinc, softwood veneer and plywood, and sawmills and planing mills. The environmental controls industry is something of an anomaly.

Most of the problem manufacturing industries are natural resource- or agriculturally-based. The electron tube industry stands out as an example of one electronics technology being replaced by another.

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Table 7

Problem Manufacturing Industries, 1985 Outlook

Rank 1985 Growth	SIC	Title	Projected Growth 84-85	Estimated Growth 83-84	Rank 83-84	Actual Growth 72-82	Rank 72-82
190	3275	Gypsum Products	-1.7	5.7	106	-1.1	155
191	2111	Cigarettes	-1.8	-0.2	187	1.2	92
192	2121	Cigars	-1.8	-1.9	196	-7.5	207
193	2431	Millwork	-2.0	3.2	147	-3.0	184
194	3822	Environmental Controls	-2.0	15.3	19	1.6	80
195	2011	Meatpacking Plants	-2.4	0.1	185	0.3	112
196	3263	Fine Earthenware Food Utensils	-2.9	-5.6	200	-6.3	204
197	2411	Logging Camps & Log Contractors	-3.0	3.6	142	5.3	25
197	2646	Pressed and Molded Pulp Goods	-3.0	-1.4	194	-4.8	199
199	2023	Condensed & Evaporated Milk	-3.4	2.6	157	0.7	102
200	3671	Electron Tubes	-3.6	2.1	164	-0.8	142
201	2085	Distilled Liquor, Except Brandy	-3.9	0.4	182	-0.2	130
202	2426	Hardwood Dimension & Flooring	-4.0	5.0	119	-3.2	185
203	3731	Ship Building & Repairing	-4.0	-3.3	198	3.6	43
204	2386	Leather & Sheep Lined Clothing	-4.0	-22.8	208	-5.6	202
204	2661	Building Paper & Board Mills	-4.0	-0.3	190	-9.5	209
206	3333	Primary Zinc	-4.9	14.7	20	-8.7	208
207	2436	Softwood Veneer & Plywood	-7.4	11.3	44	-1.0	151
208	2421	Sawmills & Planing Mills-General	-10.4	17.1	13	-1.9	166
209	3511	Turbines & Turbine Generator Sets	-21.9	0.8	177	-4.4	197

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We have selected 5 manufacturing industries show below in Table 8 as problem manufacturing sectors based on their longterm decline and negative future prospects.

Table 8
Problem Industries: 1985 Outlook

<u>SIC</u>	<u>Industry</u>	<u>72-81</u>	<u>84-84</u>	<u>1985-Peak Year</u>
2652	Setup Paperboard Boxes	-6.7	-0.0	-48.3 (72)
3251	Brick & Structured Clay Tile	-6.5	-1.5	-27.9 (72)
2646	Pressed & Molded Pulp Goods	-4.8	-3.0	-40.4 (72)
3511	Turbines & Turbine Generator Sets	-4.4	-21.9	-46.7 (73)
3021	Rubber & Plastic Footwear	-3.6	-1.1	-31.7 (72)

Turbines and Turbine Generator Sets

Shipments of turbines and turbine-generator sets is projected to decrease 21.9 percent in 1985. This industry's value of shipments has decreased 46.7 percent from the peak year of 1973. No significant upturn is anticipated until late 1980's or early 1990's. The decision of electric utilities whether to replace or rebuild aging equipment will have a significant impact on this industry.

Pressed and Molded Pulp Goods

The compound annual rate of decline for this industry was 3.7 percent from 1972-1984 and is expected to decline by about 3.0 percent in 1985. The average annual rate of decline is projected between 2 and 3 percent to 1989. New technology to adapt pulp trays for use in microwave and conventional ovens could counter this projected decline.

Set-up Paperboard Boxes

This industry declined at a compound annual rate of 6.7 percent from 1972-1982 and declined about 1.5 percent in 1984. Real shipments for 1985 are forecast to remain at about the same level as last year. During the 1985-1989 period the real value of shipments is expected to increase at 1.0 percent annually. Competition from other packing sectors, particularly plastics, will constrain growth during the eighties but the industry is expected to maintain its share for high value specialty packaging.

Brick and Structural Clay Tile

After declining during the 1972-1982 period at compound annual rate of 6.5 percent, the value of shipments by the industry rose about 30 percent in 1983 and 10 percent in 1984 to 1.05 billion dollars, still well below the cyclical peaks of the 1970's. Growth next year is projected to remain flat and the industry is expected to experience slow long-term growth at best. While brick and tile are popular cladding material in residential construction. More cost effective materials have eroded its market share and no significant rebound is projected.

Rubber and Plastics Footwear

After declining at a 3.6 compound annual rate from 1972-1982, the value of shipments rose by 0.8 percent in real terms to 706 million dollars in 1983. In 1984 the decline continued with a 1.1 percent decrease in the value of shipments and the same decline is projected for 1985. Imports, which were 30 percent in 1970, are estimated to have accounted for two-thirds of U.S. consumption in 1984. Long-term growth rates are expected to depend on the size of the population and thus should grow slowly over time. Foreign competition will continue strong with shifts in country of origin as occurred in the change from Japan to South Korea and Taiwan during the 1970s.

Key Manufacturing Industries

There are a number of ways to identify industries that are "key" to U.S. national economic and international trade performance. Three clusters of industries -- consumer durables, motor vehicles, and construction -- are of particular importance. Because these three cyclically sensitive groups influence demand in so many other industries, changes in their growth have a large effect on the general economy. As shown in Appendix Table 1, most of these industries have rebounded sharply from the 1981-82 recession and are expected to have growth rates in 1985 that will exceed their long-term rates. Nevertheless, 1985 growth rates will not match the high-growth performances of 1984.

Consumer Durables

Consumers tend to postpone durable goods purchases when their disposable incomes are uncertain or declining. Sales rebound strongly with recovery, however, at least until pent-up new and replacement demands are satisfied.

For example, all the consumer durables industries shown below in Table 9 will have shipments growth rates in 1985 that are below those in 1984, when backlog demands were still being met. Nevertheless, shipments growth rates in 1985 are expected to exceed long-term rates. Shipment levels should far surpass the 1982 low-demand levels. Moderating growth in these industries eventually will affect demand for aluminum and steel, paints and allied products, electronics, and a multitude of other industries.

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Table 9

Consumer Durables: 1985 Outlook

Industry	SIC Code	1985 Shipments (millions of 1972 dollars)	Growth Rates 1985/84 long-term	% above 1982 shipments level
Wood furniture	2511	3,066	-5.7	5.6
Upholstered furn.	2512	2,584	-5.9	4.6
Metal furniture	2514	999	-5.1	3.7
Mattresses/bdsprngs	2515	1,271	-1.8	3.1
Lawn & garden	3524	1,319	-8.0	3.4
Cooking equipment	3631	1,835	-6.9	2.8
Refrig. & freezers	3632	1,760	-8.9	6.5
Laundry equipment	3633	1,493	-7.3	5.1
Elec. Housewares	3634	1,967	-2.4	1.5
Vacuum clearners	3635	577	-4.3	3.6
Sewing machines	3636	156	-4.7	6.1
Other appliances	3639	1,066	-10.1	1.7
Radio & TV sets	3651	8,173	-7.2	1.6
Motorcycles, etc.	3751	682	-4.5	5.5
Photo equipment	3861	10,800	-0.8	0.8
Sporting goods	3949	2,313	-3.0	2.9

Motor Vehicles

The automobile industry is expected to show similar patterns in 1985 as compared with 1984 and long-term growth rates should show substantial improvement from 1982 levels (see Table 10 below). Consumers who had postponed car purchases during the 1981-82 period entered the market strongly in 1983-84, but the 1985 forecast reflects some satisfaction of this pent-up demand. Most of the automobile satellite industries will reflect this trend. A few of these are listed below, but many others--plastics, glass, and metals, to name a few--will also be affected by the slowdown in auto sales.

Table 10
Motor Vehicles: 1985 Outlook

Industry	SIC Code	1985 Shipments (millions 1972 \$)	% above 1982 shipments
Motor vehicles	3711	61,400	67.2
Parts & accessories	3714	19,194	56.7
Truck & bus bodies	3713/16	1,860	21.4
Truck trailers		1,259	62.4
Auto stampings	3465	7,554	86.5
Tires & innertubes	3011	4,925	23.8
Hose & belting	3041	1,050	21.8

Construction

The slackening rate of new housing starts expected in 1985 will have a large effect on many directly related industries, as well as on those, such as consumer household durables, that are indirectly related to new housing (see Table 11). For construction in general, however, nonresidential construction will take up some of the slack. Many of the industries particularly involved in nonresidential construction--for example, cement and concrete products and construction machinery--will better their long-term growth rates, even though these rates are still well below last year's. Most of the wood-related industries will not match their long-term growth rates, however, and some will have shipments levels only slightly higher than in 1982.

Table 11

Construction: 1985 Outlook

Industry	SIC #	1985 Shipments (1972 \$)	% above 1982 shipments
Logging	2411	4,462	4.8
Sawmills	2421	5,770	7.5
Flooring	2426	464	10.9
Millwork	2431	2,571	43.9
Hardwood plywood	2435	900	19.4
Softwood plywood	2436	2,400	31.7
Struct. wood	2439	467	1.5
Wood, preserved	2491	305	20.0
Particleboard	2492	3,066	17.5
Hyd. Cement	3241	1,775	28.8
Brick	3251	370	40.9
Concrete B & B	3271	745	28.5
Other concrete pr.	3272	1,985	30.2
Ready-mix concrete	3273	4,435	30.5
Gypsum products	3275	760	33.1
Struct. metal	3441	3,930	9.7
Prefab buildings	3448	1,224	33.6
Construction machinery	3531	4,260	-2.9
Power-driven tools	3546	1,155	22.0

Balance of trade (surpluses/deficits) and total trade (exports plus imports) are two measures for indicating key U.S. industries in terms of international trade. Table 12 below lists 20 selected industries whose 1985 exports are projected in the Outlook to be at least twice the value of their imports, ranked in order of their 1985 trade surplus. Also shown is the estimated 1984 trade surplus and the increase or decrease of the surplus from 1984 to 1985. Comparing Table 12 with Table 5, only two of the trade surplus industries are included in the top 20 projected growth leaders in 1985 -- aircraft and space vehicle equipment not elsewhere classified. Almost all of the surplus industries do rank in the upper half of Appendix Table 1, however. The surplus industries are dominated by aerospace, chemical, and instrumentation. Aircraft stands out with a surplus projected to increase over 150 percent, as well as in absolute terms with a projected 1985 surplus of over \$7 billion. Although they show sizable projected trade surpluses in 1985, three industries on the list -- plastic materials and resins, internal combustion engines not elsewhere classified, and refrigeration and heating equipment -- show surpluses declining from 1984.

Table 12

Selected Trade Surplus Industries for 1985
(Millions of Dollars)

SIC	Industry	Exports 1985 (projected)	Imports 1984	Balance of Trade		
				Surplus 1985	Inc./Dec. 1985 - 1984	(projected)
3721	Aircraft	8,105	1,777	7,028	4,606	2,422
3728	Aircraft Equipment nec.	5,450	1,800	3,640	3,119	521
2869	Industrial Organic Chemicals nec.	5,250	1,900	3,350	3,200	150
3533	Oilfield Machinery	3,200	36	3,164	2,823	341
3724	Aircraft Equipment & Parts	3,335	1,410	1,925	1,679	246
2821	Plastic Materials & Resins	2,560	895	1,665	1,786	(121)
3519	Internal Combustion Engine nec.	2,060	396	1,664	1,586	(78)
3531	Construction Machinery	2,950	1,350	1,660	1,550	50
2631	Paperboard Mills	1,380	55	1,325	1,091	234
2874	Phosphatic Fertilizer	1,250	54	1,196	1,145	51
3465	Automotive Stampings	1,430	270	1,160	1,090	70
2879	Agricultural Chemicals	1,415	322	1,093	1,055	38
3585	Refrigeration & Heating Equipment	1,680	800	880	904	(24)
3769	Space Vehicle Equipment nec.	840	0	840	645	195
3829	Measuring & Controlling Devices	654	71	583	531	52
2899	Chemical Preparations nec.	970	400	570	518	52
3561	Pumps & Pumping Equipment	975	415	565	530	35
3811	Engineering & Scientific Inst.	941	386	555	546	9
3823	Process Control Inst.	753	313	440	390	50
3842	Surgical Appliances & Supplies	472	137	335	314	21

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Table 13 similarly lists the projected trade deficit industries where imports are anticipated to be at least twice the value of exports. None of these deficit industries appear in Table 7 which shows the 20 industries with the lowest projected growth rates in 1985. On the contrary, most of these industries rank in the upper half of Appendix Table 1. Primary aluminum and primary copper, in fact, are in the top 20 projected growth leaders, although their presence is a result of a temporary turnaround rather than longer term trends. Most of these industries are projected to experience increasing trade deficits from 1984 to 1985, with the exception of Radio and TV Receiving Sets for which the deficit is projected to decline substantially.

Table 13

Selected Trade Deficit Industries for 1985
(millions of dollars)

SIC	Industry	Imports 1985 (projected)	Exports 1985 (projected)	Trade Deficit 1985 (projected)		Balance of Trade Inc./Dec.) 1985-1984 (projected)
				1984	1984 (projected)	
3711	Motor Vehicles & Car Bodies	23,400	1,800	-21,600	-19,700	(1,900)
331A	Steel Mill Products	10,269	997	-9,273	-7,812	(1,461)
3651	Radio & TV Receiving Sets	8,000	680	-7,320	-8,370	1,050
2621	Papermill Except Bldg. Paper	4,400	715	-3,685	-3,555	(130)
3579	Office Machines & Typewriters	2,600	560	-2,040	-1,337	(703)
3661	Telephone & Telegraph Appar.	2,505	800	-1,705	-945	(760)
3011	Tire & Inner Tubes	1,900	425	-1,475	-1,475	0
363	Household Appliances	2,500	1,135	-1,365	-1,100	(265)
3751	Motorcycles, Bicycles & Parts	1,459	118	-1,341	-1,192	(149)
3334	Primary Aluminum	1,575	400	-1,175	-1,150	(25)
3911	Jewelry & Precious Metals	1,250	155	-1,095	-981	(114)
3949	Sporting & Electric Goods nec.	1,346	311	-1,035	-795	(240)
3541	Metal Cutting Machines Tools	1,400	450	-950	-750	(200)
3564	Blowers & Fans	938	155	-783	-666	(117)
3452	Bolts, Nuts, Rivets, Washers	996	236	-730	-580	(150)
3331	Primary Copper	790	85	-705	-504	(201)
3552	Textile Machinery	900	270	-630	-605	(25)
2649	Converted Paper Products	742	286	-456	-342	(114)
3574	Calculating & Accounting Machines	635	245	-390	-342	(48)

Table 14 on the following page shows the top 20 U.S. industries ranked in terms of total trade -- exports and imports -- for 1984 (through October). Four of these industries are projected to be among the 1985 growth leaders -- semiconductors, aircraft, electronic computing equipment, and motor vehicle parts; none are projected to be among the lowest growth industries. Nine of these 20 industries are in the top 50 deficit industries, while seven are in the top 50 surplus industries.

Table 14
U.S. Industries Ranked in Terms of Total Trade

SIC Code	Description	Exports + Imports* (\$000)		In Top 50 Surplus Industries	In Top 50 Deficit Industries
		YTD '83	YTD '84		
3711	Motor vehicles & passenger c	29,026	37,685		x
2911	Petroleum refinery products	18,791	21,534		x
3714	Parts of motor vehicles	11,445	15,690		x
3573	Electronic comput. equipment	10,518	14,384	x	
3674	Semiconductors	6,937	10,082		
3312	Steel products	5,773	9,093		
3651	Radio & TV receiving sets	5,574	8,286		x
3339	Smelter & refined nonferrous	6,364	6,800		x
3662	Radio & TV communication equip.	4,779	5,805		x
2869	Industrial organic chemicals	4,839	5,766	x	
3621	Aircraft	7,001	5,409	x	
3728	Aircraft & spacecraft parts	4,678	5,374	x	
2819	Industrial inorganic chemicals	3,957	4,668	x	
3531	Construction machinery & equip.	3,569	4,517	x	
3861	Photographic equip. & supplies	3,831	4,428		
2621	Paper mill products	3,289	4,367		x
3569	Industrial machinery & equip.	3,144	4,311	x	
3679	Electronic components	2,986	4,198		x
3579	Office machines and parts	2,306	4,079		x

* Imports for consumption -- customs value; Domestic exports, f.a.s.

Service Sector Projections

Services-producing industries currently account for over two-thirds of GNP and have been increasing this percentage for many years. The strength of the service sector since 1972 has been evidenced by several factors:

- o a rapid growth of intermediate business services;
- o an upward pressure on prices of services;
- o a rapid increase in service sector employment;
- o a further shift in the source of personal income from goods-producing industries to services-producing industries; and
- o an increasing importance of services in U.S. international trade.

These trends are expected to continue into the 1990s with some industries doing better than others and with most dependent upon a strong economy.

Coverage of the services sector has been significantly increased in the 1985 U.S. Industrial Outlook over the 1984 publication with an increase of over 28 percent in the number of pages (99 in 1985 -- up from 77 in 1984).

This includes expanded coverage of information services, insurance, management consulting, operations and maintenance, and ocean shipping. Capsule comments on the 18 service categories included in the 1985 U.S. Industrial Outlook follow.

Information Services -- This sector includes data processing services, electronic data bases, videotex and teletex, and R&D services. The largest increases are expected in data processing (10 to 18 percent increase for 1985 over 1984) with long-term growth trends expected near their historic highs. Electronic data bases are expected to grow about 23.1 percent in 1985 over 1984, with average annual growth through 1989 of about 23 percent. This is the fastest growing segment of information services because of its small base and its continued growth depends on the increasing acceptance of personal computers. Videotex and teletext services are expected to grow about 10 percent in 1985 from 1984 and at 10 percent or less annually for the next several years. R&D service growth should be about 6 percent in 1985 over 1984.

Transportation Services -- Long-term prospects for airlines are optimistic with an average annual growth rate of 4 to 5 percent for the next decade. In trucking, an 8 percent increase in ton-miles is expected in 1985 over 1984, which was 7.1 percent over 1983. The long-term prospects are favorable, dependent on the overall economy. Railroad traffic and revenues are expected to increase 3 percent and 10 percent, respectively, in 1985 over 1984.

Long-term prospects for railroads are optimistic with an average annual growth rate of 2.8 percent through 1989, dependent on a strong economy. In ocean shipping, liner operations in the domestic deep sea trade are at relatively good levels keeping pace with growth in the U.S. economy. The domestic tanker industry is in a considerably stronger position than the foreign trade tanker sector. Prospects are closely tied to domestic production and consumption of petroleum. No significant changes are expected in this market.

Wholesale Trade -- Merchant wholesaling is expected to post an average gain of 10 percent for 1985 with durable goods up 12 percent and nondurable goods up 8 percent. Average annual gains of 9 percent are forecast through 1989.

Retail Trade -- Overall retail sales are estimated to have increased by 10.5 percent in 1984 from 1983. An increase of 9.5 percent is forecast for 1985 with durable goods comprising 31.5 percent and nondurable goods comprising 68.5 percent of all retail trade.

Advertising -- This industry is expected to continue to grow faster than the economy as a whole with an average annual growth rate of 10 percent through 1989.

Hotels and Motels -- An increase in gross receipts of 10 percent is expected in 1985 with favorable long-term prospects.

Travel Services -- An increase in expenditures in 1985 over 1984 are expected to be 10.1 percent. An average annual growth rate of 4 percent is expected through 1989.

Motion Pictures -- Box office receipts are expected to rise 6 percent in 1985 over 1984 and to average an annual increase of 7 percent through 1989.

Commercial Banking -- U.S. commercial banks have successfully satisfied rising credit demands as economic growth remains strong. The banking system appears strong enough to absorb any foreseeable shocks. Asset growth of 9 percent and loan increases of 11 percent are expected in 1985 over 1984.

Savings Institutions -- Assets are expected to increase by 10 percent, mortgages held are expected to increase by 10 percent, and mortgages made are expected to decline by 10 percent in 1985 over 1984.

Insurance -- Life insurance purchases are forecast to increase by 11.5 percent and premiums are expected to increase by 8 percent in 1985. In the long-term, large insurers are expected to increase their market share from 48 percent to 50 percent by 1990 as small insurers are driven out.

Equipment Leasing -- This industry is expected to increase by 5 percent in 1985 over 1984. The long-term performance depends on a continued economic expansion. The international market will become more of a factor in the next few years.

Health and Medical Services -- Health care expenditures are expected to rise by 10 percent in 1985 with an average annual increase of 9 to 10 percent through 1990. Health maintenance organizations, other prepaid plans, home health care services, and freestanding emergency centers will continue to grow in enrollment and expenditures, causing hospitals to market themselves more aggressively in order to stay competitive.

Franchising -- In 1985, new entrants are expected to outnumber dropouts by 5 percent. Through 1990, the greatest gains are expected in business format franchising with 13 percent average annual increases.

Educational Services -- Educational expenditures are expected to increase by 6 percent in 1985 over 1984. The present downward trend in enrollment is expected to be reversed by 1986 and then continue to increase through 1992.

Management, Consulting, and Public Relations Services -- This industry sector is forecast to increase 13 percent in 1985 over 1984 as a result of general economic expansion. The long-term prospects are very favorable, but are dependent on overall growth of the economy and on the pace of institutional and structural change in the way goods and services are produced.

Operations and Maintenance Services -- An increase is expected in 1985 over 1984 with the long-term outlook quite favorable.

Architectural and Engineering Services -- Receipts are forecast to increase by 5.3 percent in 1985 and at an average annual rate of about 5 percent through 1989.

As is evident, all overall categories are forecast to increase both in 1985 and through the 1989-1990 period. This, of course, does not mean that there will not be industry segments within these overall categories that will suffer declines during this period. But in general, services-producing industries are expected to continue to grow over the next five years.

Table 15
Service Sector Performance

As has been an evident pattern for several years, the services industries have continued their steady climb in attaining an increasing share of the total GNP as can be seen below.

Percentage Distribution of GNP*

	<u>1972</u>	<u>1977</u>	<u>1982</u>	<u>1983</u>
Goods-Producing Industries	34.3%	32.9%	30.5%	30.3%
Service-Producing Industries	64.6%	65.4%	68.6%	68.3%

Source: U.S. Department of Commerce, Bureau of Economic Analysis

*The totals do not add to 100 percent because of rounding and the absence of statistical discrepancy and residual percentages.

And although there was a slight decline in the percentages for both goods-producing and service-producing industries as a percentage of GNP from 1982 to 1983, the rate of the decline of the service-producing industries was less than that of the goods-producing industries.

While the size and significance of the broad industry categories that comprise the service-producing industries (transportation, communications, and utilities; wholesale and retail trade; finance, insurance, and real estate; services; and government) can be measured by their contribution to National Income, such data are not available at the individual industry level. Employment data are generally the best available indicators of growth or decline in these industries.

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When considering the whole economy, the following table indicates the steadily increasing percentage of total employment provided by the service-producing industries from 1960 to 1983.

Table 16
Services Industries Percent of Total Employment

	<u>Services Employment</u>	<u>Percent Change</u>
1960	62.29%	
1965	63.92	4.41
1970	66.74	4.41
1975	70.63	5.83
1976	70.58	-.07
1977	70.48	.14
1978	70.49	.01
1979	71.54	1.53
1980	71.62	1.53
1981	72.03	.57
1982	73.41	1.92
1983	74.05	.87

Source: U.S. Department of Labor, Bureau of Labor Statistics

This broad pattern of employment increases in the service-producing industries is further confirmed by a more detailed look at 238 industry groups identified at the 3-digit SIC level, using seasonally unadjusted data for May 1981 to May 1984. Of the 20 industry groups with the largest contributions to employment gains between May 1981 and May 1984, 17 are service-producing. These three goods-producing groups that ranked among the top 20 employment gainers were the electronic components and accessories group, the miscellaneous plastics products group, and the communication equipment industry group. These top 20 industry groups are identified in Table 17.

Table 17

Service Industry Groups with Largest Employment Gains
(May 1981 to May 1984)

<u>Industry</u>	<u>Employment</u> <u>May 81</u>	<u>Employment</u> <u>May 84</u>	<u>Employment</u> <u>Change</u> <u>(thousands)</u>	<u>% of Total</u> <u>Employment</u> <u>Change</u>
Eating and drinking places	4,847.1	5,292.0	444.6	18.3%
Personnel supply services	605.8	821.7	215.9	8.9
Grocery stores	2,133.7	2,298.3	164.6	6.8
Computer & data processing services	326.4	462.3	135.9	5.6
Hotels, motels, & tourist courts	1,089.4	1,218.5	129.1	5.3
Private hospitals	2,871.1	2,997.7	126.6	5.2
Electronic components & accessories	554.4	680.2	125.8	5.2
Nursing & personal care facilities	1,021.1	1,144.8	123.6	5.1
Offices of physicians	779.2	898.8	119.6	4.9
Legal services	521.5	631.3	109.8	4.5
Services to buildings	516.5	602.6	86.1	3.5
Offices of dentists	356.8	429.2	72.4	3.0
Security brokers & dealers	208.3	277.9	69.6	2.9
Misc. plastic products	481.4	544.6	63.2	2.6
New & used car dealers	751.7	812.1	60.4	2.5
Amusement and recreation services	816.6	876.7	60.1	2.5
Automotive repair shops	352.0	408.7	56.7	2.3
Communication equipment	552.1	605.4	53.3	2.2
Misc. shopping goods stores	595.0	647.0	52.0	2.1
Accounting, auditing & bookkeeping	327.4	378.5	51.1	2.1

Source: U.S. Department of Labor, Bureau of Labor Statistics, Establishment Survey data.

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At the other end of the spectrum, of the 20 industry groups with the largest employment losses between May 1981 and May 1984, 16 are goods-producing and only 4 are services-producing. The only services-producing industry groups included in the top 20 employment losers are Class I railroads (railroads and railway express services), down 5.0 percent of the total employment change, telephone communication (-3.5 percent), wholesale trade of petroleum and petroleum products (-2.5 percent), and variety stores (-1.0 percent). The largest employment losers were blast furnaces (-6.9 percent) and nonhighway heavy construction (-5.0 percent).

Another way of analyzing the growth of industries is by the rate of change in their growth. When this measure is applied, 14 of the top 20 most rapidly growing industries between May 1981 and May 1984 were services-producing and only six were goods-producing. These six goods-producing industries included in the top 20 of this group are miscellaneous transportation equipment; guided missiles, space vehicles, and parts; electronic components and accessories; office furniture; miscellaneous furniture and fixtures; and roofing and sheet metal work. The top 10 most rapidly growing industries are shown in Table 18 at the 3-digit SIC level, using seasonally unadjusted data from May 1981 to May 1984.

Among the top 20 most rapidly declining industries from May 1981 to May 1984, only three were services-producing industries. These three were Class I railroads with a 24.45 percent decline, taxicabs (-19.02 percent), and combined real estate, insurance, etc. (-16.32 percent). The most rapidly declining industries during this period were copper ores mining (-49.31 percent) and iron ores mining (-45.00 percent).

A further observation when comparing the industries with the greatest percentage of total employment growth and the most rapidly growing industries, is that only four appear in the top ten of each group. Among the services-producing industries, computers and data processing services, personnel supply services, and legal services appear in both groups. The only goods-producing industry to appear in both groups is electronic components and accessories.

Table 18
The Most Rapidly Growing Service Industries
(May 1981 to May 1984)

<u>Industry</u>	<u>Employment</u>	<u>Percentage</u>	
	<u>May 81</u>	<u>May 84</u>	<u>Rate of</u>
	<u>(thousands)</u>		<u>Growth</u>
Computer & data processing services	326.4	462.3	41.64%
Personnel supply services	605.8	821.7	35.64
Security brokers and dealers	208.3	277.9	33.41
Misc. transportation equipment	39.2	50.9	29.85
Radio, TV & music stores	144.5	186.1	28.79
Guided missiles, space vehicles & parts	120.6	149.1	23.63
Mailing, reproduction, and stenographic	125.9	155.4	23.43
Electronic components and accessories	554.4	680.2	22.69
Office furniture	53.4	64.9	21.31
Legal services	521.5	631.3	21.05

Source: U.S. Department of Labor, Bureau of Labor Statistics, Establishment Survey data.

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A similar comparison of the groups with the largest employment losses and the most rapidly declining industries reveals only three industries included in the top ten of both groups. Blast furnaces and basic steel products and construction and related machinery appear as goods-producers. Only Class I railroads appear as a service-producer.

The increase in employment within the services sector has not come from manufacturing or agriculture, however. The majority of the services employment has come from the expansion of the labor force, particularly increased participation by women. This growth has come in response to an increase in demand for consumer services, by the changing nature of international trade, and especially by the rapidly growing demand by businesses for computer and data processing, accounting, marketing and other information services they once provided for themselves. The strength of the service sector is growing not at the expense of other industries, however, but by serving them.

Wang #1017

Appendix Table 1

Growth in Constant Dollar Industry Shipments for 209 Manufacturing Industries Listed by 1985 Rank Order 1/

1985 Rank 2/ Order	SIC Code	Industry Title	Annual Growth Rate 1984-85	Annual Growth Rate 1983-84	Compound Annual Growth Rate 1972-82
1	3674	Semiconductors and Related Devices	37.4	44.2	34.1
2	3332	Primary Lead	28.0	-27.0	-3.8
3	3721	Aircraft	21.1	-6.6	2.8
4	3764	Space Propulsion Units and Parts	18.0	9.6	1.4
5	3573	Electronic Computing Equipment	17.0	20.5	19.2
6	3334	Primary Aluminum	15.6	-17.0	-2.2
7	3693	X-ray Apparatus and Tubes	15.4	15.4	15.4
8	3761	Guided Missiles and Space Vehicles	14.7	12.6	0.2
9	332	Iron and Steel Foundries	13.6	12.8	-4.3
10	3714	Motor Vehicle Parts and Accessories	12.3	16.1	-4.0
11	3769	Space Vehicle Equipment, n.e.c.	11.7	10.8	-0.8
12	336	Nonferrous Foundries	10.8	5.0	-2.1
13	2819	Industrial Inorganic Chemicals, n.e.c.	10.0	10.7	0.1
14	3825	Instruments To Measure Electricity	10.0	19.1	8.4
15	3331	Primary Copper	10.0	-2.4	-2.3
16	3448	Prefabricated Metal Buildings	10.0	18.4	4.2
17	3451	Screw Machine Products	10.0	11.6	-0.1
18	3544	Special Dies, Tools, and Jigs	9.6	16.3	-0.9
19	2812	Alkalies and Chlorine	9.6	1.9	-5.4
20	3623	Electric Welding Apparatus	9.4	7.8	-1.0
21	3662	Radio and TV Communication Equipment	9.1	7.5	8.0
22	2891	Adhesives and Sealants	8.9	9.3	1.8
23	2893	Printing Ink	8.7	8.5	-0.2
24	3567	Industrial Furnaces and Ovens	8.6	16.7	-1.4
25	3465	Automotive Stampings	8.1	22.5	-2.6
26	2831	Biological Products	8.0	8.0	12.2
27	3661	Telephone and Telegraph Apparatus	8.0	10.0	4.3
28	2879	Agricultural Chemicals, n.e.c.	7.9	10.0	2.8
29	2038	Frozen Specialties	7.6	4.1	1.2
30	3724	Aircraft Engines and Engine Parts	7.4	-11.2	2.7
31	3841	Surgical and Medical Instruments	7.2	7.2	7.1
32	3494	Valves and Pipe Fittings	7.1	6.1	2.0
33	3519	Internal Combustion Engines, n.e.c.	7.0	8.0	0.9
34	2647	Sanitary Paper Products	7.0	6.5	4.1
35	2611	Pulp Mills	7.0	4.9	3.4
36	3546	Power Driven Handtools	7.0	7.4	2.6
37	3679	Electronic Components, n.e.c.	6.9	16.3	8.8
38	3842	Surgical Appliances and Supplies	6.8	6.6	6.7
39	3533	Oilfield Machinery	6.7	5.4	10.1
40	3532	Mining Machinery	6.7	5.6	-1.4
41	3643	Current-carrying Wiring Devices	6.5	10.0	-1.4
42	3621	Motors and Generators	6.5	10.0	0.2
43	331A	Steel Products (3312,3315,3316,3317)	6.4	2.6	-4.8
44	3542	Metal-Forming Machine Tools	6.2	39.6	-4.4
45	3861	Photographic Equipment and Supplies	6.2	7.0	5.4
46	3631	Household Cooking Equipment	6.1	12.9	3.3
47	3622	Industrial Controls	6.0	8.0	2.9
48	3579	Office Machines and Typewriters, Etc.	6.0	6.5	7.4
49	3574	Calculating and Accounting Machines	6.0	6.0	13.0
50	3811	Engineering and Scientific Instruments	6.0	12.6	4.0
51	3562	Ball and Roller Bearings	6.0	8.9	-2.9
52	2771	Greeting Card Publishing	5.9	7.0	2.7
53	3678	Electronic Connectors	5.9	11.9	10.6
54	2816	Inorganic Pigments	5.9	12.6	-3.9

1985

Rank 2/
OrderSIC
CodeIndustry
TitleAnnual Growth Rate
1984-85 1983-84 Compound
Annual
Growth Rate
1972-82

55	2821	Plastics Materials and Resins	5.8	6.5	1.3
56	3944	Games, Toys, and Childrens' Vehicles	5.6	6.8	2.9
57	3272	Concrete Products, n.e.c.	5.5	14.2	-2.5
58	3715	Truck Trailers	5.5	50.1	-3.6
59	3541	Metal-Cutting Machine Tools	5.5	12.3	1.4
60	371A	Truck and Bus Bodies (3713,3716)	5.3	17.4	-0.2
61	2086	Bottled and Canned Soft Drinks	5.1	5.4	2.0
62	3911	Jewelry and Precious Metal	5.1	-8.9	-5.2
63	3829	Measuring and Controlling Devices, n.e.c.	5.1	11.4	7.7
64	2875	Fertilizers, Mixing Only	5.0	13.0	-1.1
65	3531	Construction Machinery	5.0	8.8	-3.2
66	2761	Manifold Business Forms	5.0	6.0	4.1
67	3651	Radio and Television Receiving Sets	5.0	12.2	3.4
68	2022	Natural and Processed Cheese	5.0	11.1	3.8
69	3523	Farm Machinery and Equipment	5.0	3.1	0.0
70	2824	Organic Fibers - Noncellulosic	4.8	1.8	2.9
71	3942	Dolls	4.7	13.0	2.0
72	3563	Air and Gas Compressors	4.5	4.3	5.3
73	2653	Corrugated and Solid Fiber Boxes	4.5	7.8	1.5
74	2017	Poultry and Egg Processing	4.5	3.6	4.2
75	2731	Book Publishing	4.5	5.1	2.5
76	2052	Cookies and Crackers	4.5	5.7	0.6
77	3561	Pumps and Pumping Equipment	4.5	3.5	2.0
78	3711	Motor Vehicles and Car Bodies	4.4	19.5	-1.5
79	2741	Miscellaneous Publishing	4.4	5.4	1.5
80	3832	Optical Instruments and Lenses	4.4	21.8	16.7
81	2721	Periodicals	4.3	6.0	5.3
82	2869	Industrial Organic Chemicals, n.e.c.	4.3	17.5	-0.3
83	2843	Surface Active Agents	4.1	3.9	6.3
84	2621	Papermills, Except Building Paper	4.1	9.3	3.4
85	2492	Particleboard	4.1	6.0	-1.3
86	2833	Medicinals and Botanicals	4.0	4.2	13.9
87	3524	Lawn and Garden Equipment	4.0	12.0	0.7
88	2631	Paperboard Mills	4.0	4.8	-0.2
89	3555	Printing Trades Machinery	4.0	4.8	3.5
90	3636	Sewing Machines	4.0	8.7	-2.1
91	3613	Switchgear and Switchboard Apparatus	4.0	7.0	0.2
92	275A	Commercial Printing (2751,2752,2754)	4.0	5.8	2.8
93	2655	Fiber Cans, Drums, and Similar Products	4.0	5.0	-0.8
94	2874	Phosphatic Fertilizers	4.0	13.0	1.9
95	2511	Wood Household Furniture	4.0	9.7	-1.6
96	3949	Sporting and Athletic Goods, n.e.c.	4.0	7.0	1.1
97	2873	Nitrogenous Fertilizers	4.0	12.7	3.8
98	2512	Upholstered Household Furniture	4.0	9.9	-0.6
99	2654	Sanitary Food Containers	4.0	5.9	-1.9
100	3823	Process Control Instruments	4.0	4.5	8.9
101	3635	Household Vacuum Cleaners	4.0	8.3	0.4
102	3273	Ready-mixed Concrete	4.0	14.0	-1.7
103	2448	Wood Pallets and Skids	3.9	10.0	8.3
104	2016	Poultry Dressing Plants	3.8	3.0	6.2
105	2795	Lithographic Platemaking Services	3.8	6.1	9.8
106	3241	Hydraulic Cement	3.8	12.9	-2.6
107	3728	Aircraft Equipment, n.e.c.	3.7	-3.9	4.1
108	3554	Paper Industries Machinery	3.6	-0.8	-0.9
109	3751	Motorcycles, Bicycles, and Parts	3.6	8.1	-1.9
110	3644	Noncurrent-carrying Wiring Devices	3.5	6.0	0.1
111	3632	Household Refrigerators and Freezers	3.5	12.4	-2.9
112	2641	Paper Coating and Glazing	3.5	4.6	1.1
113	2732	Book Printing	3.5	4.5	1.4
114	2842	Polishes and Sanitation Goods	3.3	3.1	-0.1

1985

Rank 2/
OrderSIC
CodeIndustry
TitleAnnual Growth Rate
1984-85 1983-84Compound
Annual
Growth Rate
1972-82

115	3675	Electronic Capacitors	3.3	5.8	3.0
116	3271	Concrete Block and Brick	3.3	12.0	-3.8
117	2711	Newspapers	3.2	4.1	0.8
118	3552	Textile Machinery	3.2	4.9	-5.8
119	3551	Food Products Machinery	3.2	6.8	0.2
120	2861	Gum and Wood Chemicals	3.1	1.8	5.7
121	2892	Explosives	3.1	5.6	-2.9
122	2515	Mattresses and Bedsprings	3.1	4.9	0.0
123	2037	Frozen Fruits and Vegetables	3.0	-10.1	2.3
124	3079	Miscellaneous Plastics Products	3.0	4.5	4.5
125	3452	Bolts, Nuts, Rivets, and Washers	3.0	3.9	-1.5
126	364A	Lighting Fixtures (3645,3646,3648)	3.0	5.6	-0.8
127	2643	Bags, Except Textile Bags	3.0	4.0	0.5
128	3639	Household Appliances, n.e.c.	3.0	13.1	1.3
129	2813	Industrial Gases	3.0	2.9	5.1
130	2899	Chemical Preparations, n.e.c.	3.0	6.9	2.9
131	3634	Electric Housewares and Fans	3.0	5.4	1.5
132	3585	Refrigeration and Heating Equipment	3.0	2.9	-0.7
133	3612	Transformers	3.0	5.5	-1.0
134	2651	Folding Paperboard Boxes	3.0	3.5	1.1
135	3633	Household Laundry Equipment	3.0	10.2	-2.1
136	3564	Blowers and Fans	2.9	1.2	0.3
137	2649	Converted Paper Products, n.e.c.	2.9	4.0	4.0
138	2865	Cyclic Crudes and Intermediates	2.9	5.6	-0.5
139	3843	Dental Equipment and Supplies	2.9	2.5	2.6
140	2141	Tobacco Stemming and Redrying	2.9	6.9	-1.9
141	2851	Paints and Allied Products	2.8	13.4	0.8
142	3961	Costume Jewelry	2.8	1.0	3.9
143	2834	Pharmaceutical Preparations	2.8	3.1	3.1
144	2514	Metal Household Furniture	2.8	7.9	-0.9
145	2642	Envelopes	2.5	2.0	2.9
146	2841	Soap and Other Detergents	2.5	2.5	1.5
147	3069	Fabricated Rubber Products, n.e.c.	2.4	9.9	-0.2
148	2844	Toilet Preparations	2.3	2.4	2.1
149	2051	Bread, Cake, and Related Products	2.1	2.4	-0.8
150	3041	Rubber and Plastic Hose and Belting	2.1	9.7	-1.7
151	2065	Confectionery Products	2.0	9.5	3.6
152	2895	Carbon Black	2.0	11.8	-2.2
153	2645	Die-cut Paper and Board	2.0	2.0	0.4
154	3161	Luggage	2.0	0.0	0.7
155	3824	Fluid Meters and Counting Devices	1.9	19.8	3.1
156	2035	Pickles, Sauces, and Salad Dressing	1.9	3.0	5.6
157	2084	Wines, Brandy, and Brandy Spirits	1.9	1.8	4.7
158	2034	Dehydrated Fruits, Vegetables, and Soup	1.7	1.9	1.4
159	3441	Fabricated Structural Metal	1.5	5.0	-0.9
160	2043	Cereal Breakfast Foods	1.4	-1.1	3.2
161	3411	Metal Cans	1.4	3.5	-0.4
162	2823	Cellulosic Manmade Fibers	1.2	7.8	0.6
163	3011	Tires and Inner Tubes	1.2	10.6	-3.6
164	3172	Personal Leather Goods, n.e.c.	1.2	0.4	0.2
165	3676	Electronic Resistors	1.1	3.9	1.9
166	3221	Glass Containers	1.1	-0.2	-0.7
167	2033	Canned Fruits and Vegetables	1.0	-6.1	0.1
168	3931	Musical Instruments	1.0	0.9	-2.8
169	3677	Electronic Coils and Transformers	1.0	3.6	0.6
170	2822	Synthetic Rubber	1.0	9.7	-0.4
171	2032	Canned Specialties	0.9	0.8	0.1
172	2024	Ice Cream and Frozen Desserts	0.5	3.0	0.6
173	3111	Leather Tanning and Finishing	0.3	-5.7	-3.0
174	3171	Women's Handbags and Purses	0.2	5.9	0.3

1985

Rank 2/
OrderSIC
CodeIndustry
Title

		Annual Growth Rate	Compound Annual Growth Rate
		1984-85	1983-84
			1972-82

175	2435	Hardwood Veneer and Plywood	0.1	7.0	-1.9
176	2082	Malt Beverages	0.1	0.2	4.8
177	2013	Sausages and Other Prepared Meats	0.1	0.8	2.5
178	2021	Creamery Butter	0.0	1.0	-0.8
178	2491	Wood Preserving	0.0	4.0	3.0
178	2648	Stationery Products	0.0	1.5	0.2
178	2652	Setup Paperboard Boxes	0.0	-1.5	-6.7
178	3151	Leather Gloves and Mittens	0.0	0.7	-4.4
183	3251	Brick and Structural Clay Tile	-0.5	9.1	-6.5
184	2131	Chewing and Smoking Tobacco	-0.8	0.8	2.8
185	2911	Petroleum Refining	-0.9	2.5	1.4
186	2026	Fluid Milk	-0.9	-0.3	0.9
187	3262	Vitreous China Food Utensils	-1.0	2.9	2.5
188	2439	Structural Wood Members, n.e.c.	-1.0	5.5	0.1
189	3021	Rubber and Plastics Footwear	-1.1	-1.1	-3.6
190	3275	Gypsum Products	-1.7	5.7	-1.1
191	2111	Cigarettes	-1.8	-0.2	1.2
192	2121	Cigars	-1.8	-1.9	-7.5
193	2431	Millwork	-2.0	3.2	-3.0
194	3822	Environmental Controls	-2.0	15.3	1.6
195	2011	Meatpacking Plants	-2.4	0.1	0.3
196	3263	Fine Earthenware Food Utensils	-2.9	-5.6	-6.3
197	2411	Logging Camps and Log Contractors	-3.0	3.6	5.3
197	2646	Pressed and Molded Pulp Goods	-3.0	-1.4	-4.8
199	2023	Condensed and Evaporated Milk	-3.4	2.6	0.7
200	3671	Electron Tubes	-3.6	2.1	-0.8
201	2085	Distilled Liquor, Except Brandy	-3.9	0.4	-0.2
202	2426	Hardwood Dimension and Flooring	-4.0	5.0	-3.2
203	3731	Ship Building and Repairing	-4.0	-3.3	3.6
204	2386	Leather and Sheep Lined Clothing	-4.0	-22.8	-5.6
204	2661	Building Paper and Board Mills	-4.0	-0.3	-9.5
206	3333	Primary Zinc	-4.9	14.7	-8.7
207	2436	Softwood Veneer and Plywood	-7.4	11.3	-1.0
208	2421	Sawmills and Planing Mills - General	-10.4	17.1	-1.9
209	3511	Turbines and Turbine Generator Sets	-21.9	0.8	-4.4

1/ All calculations in tables 1 and 2 are based on industry shipments expressed in 1972 dollars. The 1972 constant dollar data provide a basis for calculating real rates of change in shipments. The percent change figures provide a measure of changes in the volume of industry shipments and allow interindustry comparisons without the distorting influence of price change.

2/ Industries with the same rank have the same growth rate. Due to rounding, industries may have identical printed growth rates and different ranks. The rank order reflects the unrounded growth rates.

General Note to add to Table 1.

*Tables included in this article were developed by Joanne Hepburn, Office of Trade and Industry Information, 202/377-1230."



TRADE INFORMATION AND ANALYSIS

PUBLICATIONS

JANUARY 1985

*A Current Listing of Available
Publications with Ordering Information*

U.S. DEPARTMENT OF COMMERCE
International Trade Administration
WASHINGTON, D.C. 20230

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Key Abbreviations

TIA - TRADE INFORMATION AND ANALYSIS

OIA - Office of Industry Assessment

IPD- Industry Publication Division
IRF- Industry Research & Forecasting Division
IPRD- Industry Projects Division
IAD- Industry Analysis Division

OTF - Office of Trade Finance

OTIA - Office of Trade and Investment Analysis

IAD- Investment Analysis Division
IED- International Economics Division
IRD- Investment Research Division
TRD- Trade Research Division

OTII - Office of Trade and Industry Information

TDD- Trade Data Division
TPID- Trade Policy Information Division
TSD- Trade Statistics Division

OPRM - Office of Program and Resource Management

RMD- Resource Management Division
PMD- Program Management Division

* * * * *

BIE - Bureau of Industrial Economics

GPO - Government Printing Office

NTIS - National Technical Information Service

OBR - Overseas Business Reports

OFPDC - Office of Forest Products and Domestic Construction

TRADE INFORMATION AND ANALYSIS

PUBLICATIONS LIST

January 1985

PLEASE NOTE: This list includes only publications that are still current. Publications listed for the first time this month are marked with an asterisk (*). Order forms are at the end.

COMPETITIVE ASSESSMENTS

A Competitive Assessment of the U.S. Advanced Ceramics Industry. March 1984, 74 pp. & appendices, NTIS PB-84-162288, \$16.00, Ted Schlie, OIA/IAD.

Discusses new ceramic materials and products which have been developed over the past 30 years. Reviews two principal areas of the ceramics industry: electronic components and engineering products, concluding that the electronic components business has been largely captured by Japan. Although at present there is no clear indication that either Japan or the United States has a general technological lead in advanced engineering ceramics, the United States may fall behind Japan in the field of advanced engineering ceramics as well.

A Competitive Assessment of the U.S. Civil Aircraft Industry. March 1984, 150 pp. & appendices, NTIS PB-84-154913, \$17.50, Ted Schlie, OIA/IAD.

Examines the future international competitiveness of the U.S. civil aircraft industry in terms of large transport, commuter, business, and helicopter aircraft. Concludes that U.S. international competitiveness will depend upon the performance and interaction among an array of economic, market, and technological variables, such as the extent to which existing large transports are replaced by new large transports in the 1990's.

A Competitive Assessment of the U.S. Fiber-Optics Industry.
September 1984, 67 pp., GPO S/N 003-009-004-33-1, \$3.00,
Timothy C. Finton, Office of Telecommunications.

Describes the enormous growth in fiber optics in the world market. Concludes that growth in a high-technology industry is especially important as it spurs increased applications and growth in other industries. Concludes that the United States presently has a modest lead over its competitors, due to the enormous resources of its major companies and their shares in the largest fiber optics market, the domestic U.S. market. Describes the importance of U.S. participation in overseas markets in order to bring about better economies of scale. Shows how U.S. firms are being challenged by the Japanese, British, French, and West Germans and makes recommendations on future actions by both industry and Government in order to keep U.S. firms competitive.

An Assessment of U.S. Competitiveness in High Technology Industries. (See entry under High Technology, below).

A Competitive Assessment of the U.S. Information Services Industry. May 1984, 61 pages, NTIS PB-84-174804, \$11.50, Ted Schlie, OIA/IAD.

Assesses the role of the United States as the largest producer of databases and on-line information services in the world, as well as the largest market for such services. Concludes that: U.S. firms are likely to remain strongly competitive in this industry if U.S. services remain relatively efficient; restrictions on access to foreign information for the development of new databases are minimal; delivery of services in foreign markets is not restricted; and trade continues to be based on the full cost of the services delivered.

A Competitive Assessment of the U.S. International Construction Industry. July 1984, 84 pp. + bibliography, GPO S/N 003-009-00431-4, \$4.50; or NTIS PB-85-103919, \$13.00, ^{1/} Ted Schlie, OIA/IAD.

Analyzes the present performance of the U.S. international construction industry and the factors and trends which will influence competitiveness in the future. U.S. international construction firms have been facing

^{1/} The price differential between GPO and NTIS arises because NTIS maintains a longer-term inventory than GPO. This publication is also available on microfiche from NTIS for \$4.50.

increasingly strong competition on the basis of total project costs, including financing costs and various forms of subsidized risk insurance. It is likely that the U.S. share of the international market for conventional (infrastructure-oriented, labor intensive) construction projects will continue to decline in the future as firms from the newly industrialized and developing countries take over a greater portion of the work of this type. This decline could be offset by a gain in the international market share for large, complex, technology-intensive projects.

A Competitive Assessment of the U.S. Manufacturing Automation Equipment Industry. June 1984, 101 pp. + bibliography, GPO S/N 003-009-00432-2, \$4.50; or NTIS PB-85-103927, \$13.00, 2/ Ted Schlie, OIA/IAD.

Examines the present and future international competitiveness of the U.S. manufacturing automation equipment industries in terms of their principal businesses: machine tools, industrial robots, and CAD/CAM systems. The U.S. machine tool industry has experienced a severe decline in its competitive position in the last several years. Though not to so serious an extent, the U.S. industrial robot manufacturers have also suffered in competition with foreign manufacturers. The U.S. CAD/CAM manufacturers, however, currently hold a strong position in relation to foreign competitors.

A Competitive Assessment of the U.S. Petrochemical Industry. August 31, 1982, 57 pp. & appendices (total, 172 pp.), NTIS PB-83-176271, \$22.00, Ted Schlie, OIA/IAD.

Discusses the restructuring of the world-wide petrochemical industry and forecasts a gradual decline in the competitiveness of U.S. commodity petrochemicals. Focuses on the opportunities arising in downstream specialty chemicals and pseudocommodity petrochemicals. Predicts that advances in technology and market needs for new, high performance materials will be the object of intense international competition among the United States, Japan, and Western Europe. Also presents policy options for consideration by the U.S. Department of Commerce.

2/ The price differential between GPO and NTIS arises because NTIS maintains a longer-term inventory than GPO. This publication is also available on microfiche from NTIS for \$4.50.

A Competitive Assessment of the U.S. Solid Wood Products Industry. August 1984, 156 pp., GPO S/N 003-009-00368-7, \$5.50, Donald W. Butts, OFPDC..

Traces the moderate growth over the past two decades of the solid wood products industry and analyzes the industry's worldwide competitive position. Presents supply, demand, and trade data for major foreign markets and competitor countries. Describes industry characteristics, raw material supply of hardwoods and softwoods, demand, trade patterns, competition, and costs, barriers to trade, trade factors and trends, policy options in solid wood trade, and future trade in solid wood products. Examines relevant Federal policies for industry implications and proposes remedial actions where appropriate.

EAST-WEST TRADE

Controlling International Debt: Implications for East-West Trade. September 1983, 30 pp., price to be announced, Allen Lenz, OTIA.

Discusses the export policies and performance of Council for Mutual Economic Assistance (CMEA) countries.

ENERGY

U.S. Energy for the Rest of the Century. July 1984, NTIS PB-84-207-406, \$10.00, Joseph F. Gustaferro, OIA/IAD.

Reports and projects U.S. energy supply and demand.

FOREIGN BUSINESS PRACTICES

Foreign Business Practices: Materials on Practical Aspects of Exporting, International Leasing and Investing. May 1981, 118 pp., GPO S/N 003-009-00343-1, \$5.50 (domestic), \$6.90 (foreign) (being updated).

Provides basic, practical information about exporting, international licensing, and investing.

FOREIGN DIRECT INVESTMENT IN THE UNITED STATES

Bibliography of Foreign Direct Investment in the United States. July 1981, 40 pp., OTIA.

Identifies and classifies by subject matter materials covering various aspects of foreign direct investment in the United States.

Direct Investment in the United States by Foreign Government-Owned Companies, 1974-1981. (1983) 117 pp., GPO S/N 003-009-00359-8, \$5.50 (domestic); \$6.90 (foreign), Michael A. Goodwin, OTIA/IAD.

Examines direct investments in the United States by companies owned or controlled either directly or indirectly by foreign governments.

Foreign Direct Investment in the U.S. Petroleum Industry. April 1982, 120 pp., GPO S/N 003-009-00354-7, \$5.50 (domestic), \$6.90 (foreign), John W. Rutter, OTIA/IRD.

Highlights the increasing rate of foreign direct investment in the U.S. petroleum industry.

Foreign Direct Investment, 1980 Transactions. (1981), 25 pp., GPO S/N 003-009-00347-4, \$2.25 (domestic), \$2.85 (foreign).

Foreign Direct Investment in the United States, 1980. (1983) 236 pp., GPO S/N 003-009-00123-2, \$8.00 (domestic), \$10.00 (foreign), BEA.

Lists completed foreign direct investments by source country.

Foreign Direct Investment in the United States: 1981 Transactions. December 1982, 70 pp., GPO S/N 003-009-00357-1, \$4.75 (domestic), \$5.95 (foreign), OTIA/IAD.

Identifies specific foreign direct investment transactions in the United States, analyzing recent trends in such investment and providing data on significant transactions.

Foreign Direct Investment in the United States: 1982 Transactions. February 1984, 72 pp., GPO: C 61-25/2:982; S/N 003-009-00366-1, \$3.50 (domestic), \$4.40 (foreign), OTIA/IAD.

Identifies specific foreign direct investment transactions in the United States, analyzing recent trends in such investment and providing data on significant transactions.

Foreign Direct Investment in the United States: 1983 Transactions. September 1984, 85 pp., GPO S/N 003-009-00370-9, \$3.25 (domestic), \$4.10 (foreign), OTIA/IAD.

Identifies specific foreign direct investment transactions in the United States, analyzing recent trends in such investment and providing data on significant transactions.

International Direct Investment - Global Trends and the U.S. Role, August 1984, 100 pp., GPO S/N 003-009-00369-5, \$5.50 (domestic), \$6.90 (foreign), John Rutter, OTIA/IRD.

Provides a non-technical overview of the growth of international direct investment, including direct investment abroad by the United States, foreign direct investment in the United States, and the concerns and policy issues raised by international direct investment.

OPEC Direct Investments in the United States. November 1981, 29 pp., GPO S/N 003-009-00350-4, \$2.50 (domestic), \$3.15 (foreign), Michael A. Goodwin, OTIA/IAD (being updated).

Lists on a country-by-country basis OPEC investment activity in the United States, including information on the location of the investment, the U.S. industry involved, the foreign corporate owner, foreign beneficial owner, type of investment, and value of the transaction.

HIGH TECHNOLOGY

An Assessment of U.S. Competitiveness in High Technology Industries. February 1983, 68 pp., GPO S/N 003-009-0358-0, \$5.00, William Finan (Contact person: Dr. Edwin B. Shykind, Technical Advisor to the Assistant Secretary for Trade Development).

Discusses the significantly altered competitive environment faced by U.S. high technology industries. Includes these key findings: high technology industries are vital to the U.S. economy; national security depends upon technology-intensive industries; the United States will have to depend heavily on advanced technology to meet increased competition in world markets; since the early 1970's there has been a decline in the international market position of U.S. high technology industries from a position of dominance to one of being strongly challenged. Foreign government industrial programs to promote high technology industries have adversely affected U.S. high technology industries and will, if trends continue, place U.S. businesses at a disadvantage. The major technological challenge to the United States is from Japan, and this challenge can be expected to broaden in the future.

Biotechnology. July 1984, 217 pp., GPO S/N 003-00360-1, \$7.00, Emily Arakaki, Basic Industries.

Reports results of meetings of representative technology industries with Federal officials that the U.S. lead in biotechnology will be challenged by Japanese and European competitors in U.S. and world markets. Discusses regulatory export controls, patent protection, antitrust research and development tax incentives.

The Computer Industry. April 1983, 70 pp., GPO S/N 003-009-00360-1, \$4.50, Robert Eckelman, International Policy.

Assesses the international competitive position of the computer industry; pinpoints major foreign and domestic challenges to U.S. computer manufacturers; and suggests policy options concerning the sector's international standing.

The Robotics Industry. April 1983, 54 pp., GPO S/N 003-009-00363-6, \$4.00, Robert Eckelmann, International Policy.

Assesses the international competitive position of the robotics industry; pinpoints major foreign and domestic challenges to U.S. robot producers; and suggests policy options affecting the sector's international standing.

The Semiconductor Industry. April 1983, 32 pp., GPO S/N 003-009-0361-0, \$3.50, Dr. Edwin B. Shykind, Technical Memorandum to the Assistant Secretary for Trade Development.

Assesses the industry's international competitive position; identifies important competitive issues; and suggests policy options to address those issues.

The Telecommunications Industry. April 1983, 78 pp., GPO S/N 003-009-00362-8, \$4.50, Robert Eckelmann, International Policy.

Profiles the competitiveness of the U.S. telecommunications industry, concluding that it is imperative that the Government make full use of bilateral and multilateral channels to promote equitable opportunities for producers' competition and growth.

Technology Intensity of U.S. Output and Trade. 32 pp., price to be announced, Lester A. Davis, OTIA.

Concludes that the United States no longer has a competitive advantage in the production and trade of high technology goods.

INVESTMENT IN THE UNITED STATES

Attracting Foreign Investment to the United States: A Guide for Government (1981). 250 pp., price to be announced, ITA (International Marketing Information Series).

Assists economic development professionals to understand the process of attracting foreign investment to specific localities in the United States. Lists names and telephone numbers of key offices and persons; provides country sketches.

Invest in the USA: A Guide for the Foreign Investor (1981). (in English and French). March 1981, 44 pp., price to be announced, ITA, Office of Export Marketing Assistance.

Discusses the substantial programs for encouraging direct investment by domestic and foreign concerns; contains a brief guide to Federal agencies having jurisdiction over foreign investment in the United States.

INVESTMENT RESEARCH & ANALYSIS

International Direct Investment - Global Trends and the U.S. Role (See entry under Foreign Direct Investment in the United States, above).

Investment Climate in Foreign Countries. 4 Volumes, August 1983, NTIS PB-83246876, \$45.00, OTIA/IRD.

Contains investment climate assessments for OECD and other European countries, including Japan and Canada (Volume 1), Africa (Volume 2), Asian countries other than Japan (Volume 3), and countries in the Western Hemisphere other than Canada (Volume 4).

JOBs AND EXPORTS

1981 U.S. Manufactured Exports & Export-Related Employment: Profiles of the 50 States & 10 Selected SMSAs. Project DTR-32-84, July 1984, price to be announced, George M. Mehl, OTIA/TRD.

Contains estimates of export-related sales and employment for each of the 50 states and the District of Columbia. Tables list value of shipments, total (direct and indirect) exports, employment, and export-related employment levels for 20 industries.

U.S. Trade Performance in 1983 and Outlook. 88 pp., GPO S/N 003-009-00367-9 \$4.50 (domestic), \$5.65 (foreign), Lester A. Davis, OTIA/TRD.

Describes developments in U.S. merchandise trade, analyzing the causes of the trade deficit and discussing the outlook for the future. Concludes that the current trade deficit is not likely to narrow quickly.

SECTORAL ANALYSIS

Annual Report to the President on the U.S./Canadian Auto Parts Agreement. Annual, statutory. Approx. 75-100 pp. (varies each year), price to be announced, Michael A. Driggs, Automotive Affairs.

Reports on the state of the auto industry, with emphasis on U.S.-Canadian automotive agreements.

Annual Report from the Secretary to the Congress on the U.S. Automobile Industry. Annual, 82 pp., price to be announced, Michael A. Driggs, Automotive Affairs.

Reports on the economic condition and competitive position of the U.S. automotive industry.

Confectionery Manufacturers Sales and Distribution. Annual. Industry survey report. Approx. 30 pp, NTIS PB-82-251547, \$8.50, Cornelius F. Kenney, Consumer Goods/Automotive.

Includes detailed data on the volume and value of sales of confectionery products, ingredients used, and foreign trade, as well as an analysis of significant industry developments and future trends.

Construction Review. Bimonthly. Pages vary; averages between 60-100 pp.; GPO ID No.: CORE, annual subscription: (Domestic), \$17.00; (Foreign), \$21.25; single copy: (domestic), \$4.75; (Foreign), \$5.95. Nathan Rubinstein, Basic Industries/OFPDC.

Is a compendium of 38 statistical series pertaining to the construction and building products industries.

Electric Current Abroad, 1984 Edition. GPO S/N 003-008-00193-9, \$2.50, BIE, Richard Whitley, Capital Goods.

Lists the characteristics of electric current in major foreign cities, including type, number of phases, frequency, and voltage.

Franchising in the Economy. Annual. 89 pp., GPO S/N 003-008-00192-1, \$2.50 (domestic), \$3.15 (foreign), Andrew Kostecka, Services.

Covers 22 business categories and discusses the nature of franchises and specific industries, with projections for increase/decrease in franchise operations. Data include sales, number of establishments, employment, minority ownership, total investment, and start-up cash required.

Franchise Opportunities Handbook. Annual. 354 pp., GPO S/N 003-008-00194-7. 354 pp., \$13.50 (domestic), \$16.87 (foreign) ITA and MBDA (October 1984), Andrew Kostecka, Services.

Provides data on most U.S. franchisors, including franchise offerings and government assistance programs and practical advice on entering franchise agreements.

Industry Consultations Program Sector Profiles, 1983. 424 pp., price to be announced, Trade Advisory Center.

Contains summaries of advice on international trade issues provided by private sector business advisors in consultation with the U.S. Government.

The Outlook for Solid Wood Products in the 1980's. 1983, 72 pp., NTIS PB-84-129790, \$6.00 (paper), \$4.50 (microfiche), Chris Kristensen and others, Basic Industries.

Examines the long-term outlook for solid wood products industries. The likelihood is that demand will fall short of earlier expectations, and major long-term shortages of solid wood products seem unlikely.

Profitability and Liquidity of Manufacturing Industries, August 1984, 8 pp. & Tables, price to be announced, Dr. Gorti V.L. Narasimham and Robert C. Reed.

Traces the improved liquidity of manufacturing industries. Notes that investment by manufacturing industries has continuously increased during the last six quarters and capital spending has outstripped internal resources, creating a financing gap that is putting increasing pressure on financial markets. Forecasts that the continued growth of corporate profits and the more generous capital consumption allowances will allow the traditional measures of balance sheet strength to stabilize in the near term. Beyond that, the outlook depends on budget deficits and interest rate outlook.

Steel: Supply and Demand in the 1980's, 1982, 46 pp., NTIS PB-83-105676, \$10.00, Don Darroch, Basic Industries.

Concludes that the prospect of a steel shortage sufficient to disrupt industrial production seriously is unlikely.

1984 U.S. Industrial Outlook. Work begins in March for a January release date, GPO Stock No. 003-008-00190-4, 626 pp., \$14, John J. Bistay, OIA/IPD.

Reviews and forecasts on an industry- by-industry basis the outlook for 300 manufacturing and service industries. Includes shipments data, trends information and analysis, trade information, and statistical profiles.

STATE EXPORTS

State Export Reports, August 1984, GPO Stock Numbers given below, \$1.25 for individual State reports (25% discount for 100 or more reports of same State; no discount for set of 50 State reports), OTII.

Present data on manufactured and agricultural exports in tabular form for exports from individual states. Include information on State exports of fish, fish products, and minerals. (Supplies Limited).

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TRADE FINANCE

International Countertrade: A Guide for Managers and Executives, November 1984, 169 pp., price to be announced, Dr. Pompiliu Verzariu, OTF.

Discusses the current countertrade environment, forms of countertrade, regulations affecting U.S. companies, and support services for countertrade. Summarizes countertrade practices in Latin America, Africa, Middle East, and Asia.

Official U.S. and International Financing Institutions: A Guide for Exporters and Investors. December 1980, 12 pp., GPO S/N 003-009-00339-3 \$2.75 (domestic), \$3.45 (foreign), Office of International Finance, Investment and Services, Dr. Marilyn J. Seiber, (being updated by Keith Smith, OTF).

Provides information on sources of financing, insurance, and procurement for U.S. exports and investments. Includes summary descriptions of U.S. Export-Import Bank, Foreign Credit Insurance Association, International Development Cooperation Agency, U.S. Department of Agriculture, Inter-American Development Bank, Asian Development Bank, and African Development Fund.

TRADE STATISTICS

Current International Trade Position of the United States, November 1984, Quarterly, 8 pp., price to be announced, OTII/TSD.

Contains charts and tables featuring total imports, exports, manufactured imports, and manufactured exports.

Current Price Developments in the U.S. and Major Foreign Countries. Monthly, 7 pp., price to be announced, OTII/TSD.

Records data on price developments in the United States and four trade competitors: Federal Republic of Germany, France, Japan, and the United Kingdom.

International Economic Indicators, September 1984. Quarterly, 72 pp., GPO S/N 003-025-80001-9, Catalogue No. 61-14, annual subscription, \$18.00; single copy: \$4.95, OTII/TSD.

Provides comparative economic data for the United States and seven other industrial countries.

Key International Economic Data. Biweekly, 3 pp., price to be announced, OTII/TSD. -

Provides figures on the balance of trade, exports, imports, balance of current account, and value of the U.S. dollar, GNP, industrial production, producer prices, and export prices.

Market Share Reports, 1978-80. Annual, OTII/TSD.

Commodity Series. 1672 separate reports, each 12pp., \$6.50, NTIS, PB 82-79 (plus commodity designation) (Inspection copy in Trade Reference Room).

Provides U.S. shares of exports from supplier countries to the world and to destinations during specified periods.

Country Series. 88 separate reports. Each 50 to 100 pp., \$9.00, NTIS PB 82-79 (plus country designation) (Inspection copy in Trade Reference Room).

Provides U.S. shares of total exports and imports of manufactures into specific countries.

United States Foreign Trade Annual, 1975-1981. Included in annual subscription to Overseas Business Reports, 34 pp., \$44 from GPO: OBR 83-07; single copy, \$2.00; also available from ITA Publications Distribution, Rm. 1617, U.S. Department of Commerce, OTII/TSD.

Lists annual value of U.S. exports, imports and merchandise balance.

United States Foreign Trade Flash Tables. Monthly, 16 pp., price to be announced, OTII/TSD.

Reports monthly on U.S. merchandise trade, trade in manufactured goods, U.S. exports and imports of selected products, U.S. trade balance, and imports of passenger cars.

United States Trade With Major World Areas 1975-1981. Included in annual subscription to Overseas Business Reports, 86 pp., \$44 from GPO: OBR 83-11, single copy, \$2.75; also available from ITA Publications Distribution, Rm. 1617, U.S. Department of Commerce, OTII/TSD.

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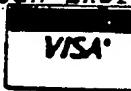
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